



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/779,961

02/17/2004

Jeffrey Liu

DCARD-0401

9107

7590

10/04/2005

Bo-In Lin
13445 Mandoli Drive
Los Altos Hills, CA 94022

EXAMINER

WALSH, DANIEL I

ART UNIT

PAPER NUMBER

2876

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/779,961

Applicant(s)

LIU ET AL.

Examiner

Daniel I. Walsh

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-78 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 9-24, 26-28, 30-32, 34-50, 52, 54-56, 58-75, and 77 is/are rejected.
- 7) ☒ Claim(s) 6, 8, 25, 29, 33, 76 and 78 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 12, 30, 37, and 61 are rejected under 35 U.S.C. 102(e) as being anticipated by Haddock (US 2002/0153421).

Re claims 1, 12, 30, 37, and 61 Haddock teaches a data storage card with an linear optical data track for storing data accessible with optical data accessing means, wherein the optical data track is supported on an optical memory strip as a cutoff piece attached to the card (FIG. 1). As the strip contains tracks, and is separate from the substrate, it is interpreted as a cutoff piece/strip.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7, 9-11, 26-28, 30-32, 34-36, 52, 54-56, 58-60, and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij et al. (US 4,868,373).

Re claims 1,30, 54 Opheij et al. teaches a data storage card comprising at least an optical data track for storing data accessible with an optical data accessing means, wherein the optical data track is supported on an optical memory strip as a cutoff piece attached to the data storage card (FIG. 1a and 1b). Though silent to being formed as a cutoff piece, the Examiner notes that it would have been obvious to one of ordinary skill in the art to form the optical storage, interpreted as a strip, including the tracks, as a separate piece/cutoff piece, in order to have parts that can be assembled to form the card. Additionally, though silent to a strip, the Examiner notes that the optical storage media is broadly interpreted as a strip. Additionally, the Examiner notes that that forming the OMS as a cutoff piece is functional language and does not further define the structure of the datacard.

Re claim 2, Opheij et al. teaches additionally a magnetic strip can be provided on the card (col 7, lines 25+).

Re claim 3, Opheij et al teaches a semiconductor chip for storing data accessible with a semiconductor data accessing means (microelectronic 20).

Re claims 4, 31, 55 Opheij et al. teaches the optical data track has a plurality of circular arc segments (FIG. 1A). The Examiner notes that the optical storage media is interpreted to include pits/lands/grooves, as is conventional in the art. The Examiner has interpreted the optical media to include arc segments in order to form the storage areas of the media.

Re claims 5, 32, 56 Opheij et al teaches the optical data track has a plurality of arc segments formed as spiral segments having a fixed center rotating with continuously varying radius through FIG. 1A. The segments are interpreted as circular spiraling arc segments. Re claims 4-5, 7, 9-11, 34-36, 52, 58-60, and 77 the Examiner additionally notes that circular arcs (concentric) or spiraling arcs (including those set forth in the claims) are both conventional in the art, and readable by conventional optical reading devices. The selection of either type of shape (concentric or spiral) is one well within the ordinary skill in the art, depending on the manufacturing process employed and the reader used, for example, to store optical data around a constant center. There is interpreted to be arc segments in the optical storage media as formed by the optical media (pits/lands/grooves, etc.), as is known in the art. The Examiner also notes that the claims do not recite that the segments are non-continuous segments not part of the same optical data track, and therefore one large spiral or circle is interpreted to contain a plurality of segments, when broadly interpreted.

Re claims 26-27, Opheij et al. teaches an OMS placement area having a lower surface profile having an area slightly larger than the OMS for placing and attaching the OMS as a cutoff piece to the data storage card, and that the heights of the OMS and data storage card are the same/flush (FIG. 1B).

Re claim 28, Opheij et al. teaches that the first protective layer is glued to the card (col 6, lines 1+), which is interpreted as a bonding layer.

3. Claims 13-14, 16-19, 21, 24, 38-39, 41-44, 46, 49-50, 62-63, 65-68, 70, and 73-75, are rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij et al., as discussed above, in view of Ovshinsky et al. (US 5,591,501).

Re the above claims, the Examiner notes that the claims recite well known structures for optical storage mediums (CD, CD-R, and CD-RW). The use of a focusing layer, reflective layer (CD), the use of a dye layer (CD-R), and the use of a phase change layer and dielectric layer (CD-RW) are all well known and conventional. Accordingly, one would have been motivated to use one of the aforementioned well known optical storage media formats, based on system and design constraints (ability to read, write, rewrite, etc.) and is well within the skill in the art.

Re claim 13, the teachings of Opheij et al. have been discussed above.

Opheij et al. is silent to the specifics of the layers and use of a trench. Re claims 24, 49, 50 and 74-75 Opheij et al. teaches the use of a glue (layer), as discussed above. Though silent to a heat activated layer, it would have been obvious to one of ordinary skill in the art to use a heat activated bonding layer, as a means to control the bonding through temperature. Such adhesives are known in the art to produce controlled and expected results. Re claims 50 and 74-75, the Examiner notes that it would have been obvious to one of ordinary skill in the art to cut or otherwise form the OMS to be bonded to the card, as a well known and conventional means of adding optical storage to a card substrate.

Re claims 13, 38, and 62 Ovshinsky et al. teaches a recording layer for disposing the data track wherein the recording layer has an area smaller than the OMS as the cutoff piece (FIG. 2A). Additionally, the Examiner notes FIG. 1, which shows that the center of the disc does not have optical media extending all the way to the center. That also supports the teaching that the recording layer is smaller than the OMS as a cutoff piece.

Re claims 14, 39, and 63 Ovshinsky et al. teaches a protective layer with a trench for disposing a recording layer therein for containing the optical data track through substrate 11, which has trenches in it that are used to hold the recording layer.

Re claims 16, 41, and 65 though silent to a dye layer below the recording layer in the trench, the Examiner notes that dye layers (organic, anthraquinone, melocyanine, etc.) are well known and conventional in optical media (CD-R) for example. One would have been motivated to use a dye layer in order to permit conventional altering of the optical media.

Re claims 17, 42, and 66 Ovshinsky et al. teaches a dielectric layer in the trench through dielectric layer 21.

Re claims 18, 43, and 67 Ovshinsky et al. teaches a phase change material in the trench (FIG. 2A).

Re claims 19, 44, and 68 Ovshinsky et al. teaches a focusing layer (layer 49). Though silent to focusing, the Examiner notes that it would have been obvious for the layer 49 to focus light, as it is there for projecting a laser beam through for accessing data in the recording layer.

Re claims 21, 46, and 70 the Examiner notes that it is well known and conventional for the dye layer to be on the recording layer (for recording). Accordingly, it would also be obvious to put the dye layer in the trench for protection/isolation, as it has been discussed above that the recording layer is inside the trench.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the teachings of Opheij et al. with those of Ovshinsky et al.

One would have been motivated to do this in order to have a optical storage medium that has increased sensitivity, decreased jitter and CNR, etc.

Re claims 13-14, though the teachings of Ovshinsky et al. teach a metal phase change layer, it is obvious to one of ordinary skill in the art to use discrete recording areas with any recording mode (CD/CD-R/CD-RW) for the reasons set forth by Ovshinsky et al., i.e. increased sensitivity, decreased jitter and CNR, etc.

4. Claims 15, 20, 22, 23, 40, 45, 47, 48, 64, 69, and 71-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij et al./Ovshinsky et al., as discussed above, in view of Miyai et al. (US 4,807,220).

Re the above claims, the Examiner notes that the claims recite well known structures for optical storage mediums (CD, CD-R, and CD-RW). The use of a focusing layer, reflective layer (CD), the use of a dye layer (CD-R), and the use of a phase change layer and dielectric layer (CD-RW) are all well known and conventional. Accordingly, one would have been motivated to use one of the aforementioned well known optical storage media formats, based on system and design constraints (ability to read, write, rewrite, etc.) and is well within the skill in the art.

Re claims 15, 20, 22, 23, 40, 45, 47, 48, 64, 69, and 71-72 the teachings of Opheij et al./Ovshinsky et al. have been discussed above.

Ovshinsky et al. teaches a reflective layer 35 disposed beneath the recording layer and the dielectric in the trench, as well as the phase change layer (FIG. 2A), but fails to teach that the reflective layer is in the trench.

Miyai et al. teaches the reflecting layer is sealed in a trench (FIG. 4).

At the time the invention was made, it would have been obvious to combine the teachings of Opheij et al./Ovshinsky et al. with those of Miyai et al.

One would have been motivated to do this to protect the layers of the recording media.

Additionally, the Examiner notes that dielectric, focusing, protective, and phase change layers are well known and conventional in the art for CD-RW. One would have been motivated to use them for such storage media capabilities. The use of a dye layer is also known for CD-R, for such storage media capabilities. The use of trenches or isolation has been discussed above as producing expected results (see above).

Allowable Subject Matter

5. Claims 6, 8, 25, 29, 33, 51, 53, 57, 76, and 78 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach an optical data card with a plurality of arc segments formed as spiral segments having a moving center rotating with continuously varying radius, or circle segments having a moving center rotating with constant radius. The prior art of record also fails to teach applying heat to the OMS on an area not overlapping the recording layer of the OMS so the recoding layer is not applied with heat.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Mathias et al. (US 2004/0050939), Gudesen (US 6,088,319), Kubota et al. (US 5,763,868), Noda et al. (US 5,696,368), Miura et al. (US 4,972,402), Yoshida (US 5,895,909), Bicknell et al. (US 2004/0071711), Hosokawa (US 2001/0046613), King et al. (US 6,934,098), Ong et al. (US 6,550,678), Naganuma et al. (US 6,277,461), Yamazaki (US 5,777,307), Sugano et al. (US 5,748,600), Imtaki et al. (US 5,744,792), Anderson et al. (US 2003/0108708), Shiratori et al. (US 6,454,915), Usami (US 2002/0034155), Wang et al. (US 6,280,809), Umada et al. (US 2005/0169117), Arioka et al. (US 2003/0039191), Pirot et al. (US 2002/0136124), and Nagatomo et al. (US 2001/0038588).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel I. Walsh whose telephone number is (571) 272-2409. The examiner can normally be reached on M-F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel I Walsh

Examiner

Art Unit 2876

9-28-05



Daniel Walsh